GENERAL SAFETY PRECAUTIONS

EPOXY RESINS

1. GENERAL

1.01 This section covers safety precautions to be observed when exposed to contact with plug compounds or other materials that consist of or contain epoxy resins in liquid form. Meticulous care is required when handling these compounds in order to avoid inhalation of fumes or body contact with curing agents, reactive diluents, or solvent solutions. Liquid epoxy resins and their curing agents that contact the skin can cause irritation. However, once solidified, epoxy resins do not have an irritation potential.

1.02 Upon the first contact with epoxy resins, most individuals are not sensitive to the irritating effects that can cause skin rash. However, the materials used in epoxy resins are sensitizing agents, and an individual's sensitivity will, in most cases, increase with repeated contact. To minimize the irritation potential, proper precautions must be exercised each time epoxy resin compounds are used. If there is no skin contact, there will be no skin irritation. If there should be accidental skin contact and the contamination is not removed from the skin, a rash may appear. The rash will usually disappear in a few days if there is no further contact.

1.03 Entry into the system by inhalation of vapors, ingestion, or through skin abrasions or cuts can cause reactions to epoxy resins in the form of respiratory effects, skin reactions, or internal disorders.

2. AVOID SKIN CONTACT

2.01 Before handling plug compound or other epoxy resins, activators, curing agents, solvents, or any of the tools that come in contact with epoxy resins, ALL exposed areas of the skin must be protected. Protection for the face, neck, arms, and hands can be provided by the use of suitable protective creams (See 2.02). Protection for the hands can also be provided by lightweight rubber or plastic gloves. The use of gloves, however, does not eliminate the necessity for applying protective creams to other exposed areas of skin. If the epoxy resin should come in contact with any unprotected skin areas, those areas should be thoroughly washed with soap and water. Waterless Hand Cleaner is more effective in emulsifying resins than soap and water and may be used for cleansing hands and forearms, but it is generally too harsh for use on tender skin areas such as the face and neck.

2.02 Protective creams are required in order to provide protection for exposed areas of the skin. Two types of cream are necessary to provide complete protection, KERODEX 71 and KERODEX 55® . The "Kerodex" 71 is water-repellent and is applied first, and the "Kerodex" 55, which is water-soluble, is applied as an outer protection. To provide effective protection, apply the creams in strict compliance with the directions on the "Kerodex" containers.

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2.03 During the work operation, avoid touching any unprotected skin areas. The "Kerodex" 55 on the hands may become contaminated from handling the epoxy resin, activator, tools, etc, and touching the skin could contaminate the skin. If water or a solution containing water should come in contact with protected areas during work operations, the contacted areas should be wiped clean, dried, and "Kerodex" 55 reapplied. To assure maximum protection during work operations that continue for extended periods, wash the covered skin areas with soap and water after the creams have been on for four hours. Dry thoroughly, and reapply both creams before continuing the work operation.

2.04 To ensure eye protection, wear safety glasses while handling epoxy resins, activators, curing agents, and solvents, and while cleaning tools that have come in contact with these materials.

3. PROVIDE ADEQUATE VENTILATION

3.01 Where practical, all mixing of epoxy resins should be done out of doors. If it is necessary to mix epoxy resins indoors, proper ventilation must be provided. In an enclosed area that is larger than 900 cubic feet, proper ventilation can usually be provided if there are windows that can be opened to allow circulation of air. If windows cannot be opened, an exhaust fan is necessary. In smaller areas, do not mix epoxy resins unless an exhaust fan or blower is used to ventilate the area. When working with epoxy resins in cable vaults or manholes, continuous ventilation using a power blower is necessary.

3.02 When it is necessary to heat epoxy resins before use to improve handling characteristics or after use to speed set-up, special care must be exercised to assure that the fumes will not be inhaled. When indoors or in any confined area where epoxy resins are heated, forced ventilation that will draw the fumes away from the craftsman should be provided.

4. CLEAN-UP AND PERSONAL HYGIENE

4.01 Personal hygiene and good housekeeping are essential in protecting against the possibility of skin irritation. Epoxy resin that comes in contact with clothing can contact the skin through the clothing. The cuffs of long-sleeved shirts are particularly vulnerable to contamination since they can inadvertently come in contact with the epoxy resins or become contaminated from the fumes of the curing agents. Work clothes that have become contaminated should be laundered before being worn again, particularly in warm weather.

4.02 As soon as the work operation has been completed, all tools should be cleaned. Do not remove protective gloves or creams until tools have been properly cleaned and all waste material has been properly disposed of.

4.03 Waste cloths, paper towels, empty resin tubes, and other disposable contaminated items should be placed in a bag or box for disposal each day. Care should be taken to avoid contaminating the outside of the bag or box.

4.04 If plastic or rubber gloves have been used, wash them thoroughly with soap and water ***while they are still on the hands.*** After gloves have been removed or if creams have been used, wash all exposed skin areas with waterless hand cleaner or with soap and water. Pay particular attention to areas between the fingers, under the fingernails, and the cuticles.